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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,925	10/19/2001	Syuuji Matsuura	0033-0772P	6304
2292	7590	06/22/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			KIM, KEVIN	
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 06/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/981,925

Applicant(s)

MATSUURA, SYUUJI

Examiner

Kevin Y. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see Remarks, filed April 6, 2006, with respect to the rejection(s) of claim(s) 1-4 under 35 USC 102 or 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the newly discovered reference(s) to Jones (US 6,437,657) and Ninomiya et al (6,967,694). Rejections based on the newly cited reference(s) follow.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Claims 1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ninomiya et al (6,967,694) in view of Jones (US 6,437,657).

Claims 1,2 and 3.

Ninomiya et al disclose a tuner comprising;

a tuner portion for tracking and amplifying a signal and converting it to an intermediate frequency signal (see col.1, lines 44-51),

a surface acoustic wave (SAW) filter (3),

a gain control and intermediate frequency amplifying circuit (4) and

a low pass filter (10) for outputting unbalanced signals.

Ninomiya et al fails to teach an output circuit connected to an output of the low pass filter for outputting balanced signals.

Jones teaches an unbalanced to balanced converter, i.e., a differential amplifier, to enhance the efficiency and reduce susceptibility to noise. See col.1, lines 40-67 and col. 3, lines 15-19.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to connect a unbalance/balance converter, such as taught by Jones, to the lowpass output of Ninomiya et al for the purpose of enhancing the efficiency and reducing susceptibility to noise.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ninomiya et al in view of Jones, as applied to claim 1 above, further in view of Numanami et al (previously cited).

Ninomiya et al in view of Jones teaches all the subject matter claimed, as explained above, but fails to specify the exact circuit requirements for the “gain control and intermediate frequency amplifying circuit” as opposed to “a dual type MOSFET amplifying circuit” required in the claim. Numanami et al teaches a high frequency amplifier that includes a dual type MOSFET (7), see Fig.1, which provides amplification with reduced distortion, see col. 7, lines 19-35.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to include a dual type MOSFET as an amplifying element of the gain control and intermediate frequency amplifying circuit (4) of Ninomiya et al for the purpose of reducing distortion as taught by Numanami et al.

#### ***Claim Rejections – 35 USC § 112***

5. Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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The claims require the gain and IF amplifying circuit to include a balanced type dual gate MOSFET. It follows that the gain and IF amplifying circuit is expected to output a balanced signal. See Figs. 6 and 7. However, claim 1 requires a low pass filter coupled to the output of the gain and IF amplifying circuit to output unbalanced signals. Since no balance to unbalance converter has been disclosed between the gain and IF amplifying circuit and the lowpass filter, scope of the claimed invention is not clearly defined.

### *Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Park (US 6,487,391) and Oh (Us 6,396,550) teach an RF receiver.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

June 18, 2006



**KEVIN KIM**  
**PATENT EXAMINER**